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c/o LADAS & PARRY
5670 Wilshire Boulevard, Suite 2100
Los Angeles, CA 90036-5679

EXAMINER
ALBERTALLI, BRIAN LOUIS

ART UNIT	PAPER NUMBER
2655	

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/005,378

Applicant(s)

HINDE ET AL.

Examiner

Brian L Albertalli

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) 5,6,12-21,26-28,33-44 and 46-49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4,7-11,22-25,29-32,45 and 50-52 is/are rejected.
- 7) ☒ Claim(s) 7 and 29-32 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/21/02, 5/28/02, 8/12/02
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Amendment

1. The preliminary amendment received on October 8, 2002 has been entered. Claims 5, 6, 12-21, 26-28, 33-44, and 46-49 are cancelled. New claims 50-52 have been added.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Enabling Voice Control of Voice-Controlled Apparatus Using a Head Mounted Camera System.

3. The disclosure is objected to because of the following informalities:
 - a) On page 3, line 10, "16" should be --24--.
 - b) On page 4, line 3, "18" should be --25--.

Appropriate correction is required.

Claim Objections

4. The disclosure and claims are objected to because the term "voice recognition" is misused for what nowadays is called --speech recognition-- in the speech signal processing art. While "voice recognition" and "speech recognition" were both once used interchangeably to refer to spoken word recognition, nowadays these two terms are

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distinguished. The term "voice recognition" now denotes identification of who is doing the speaking (class 704/246), while "speech recognition" (or "word recognition") denotes identification of what is being said (class 704/251). So, appropriate correction to the proper terms of art is required.

5. Claim 7 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 1, as amended, contains all of the limitations of the head mounted camera system as recited in claim 7.

6. Claims 29-32 are objected to because of the following informalities: the dependencies of claims 29 and 32 have not been updated to reflect the amendment to the claims. Claims 29 and 32 are dependent on cancelled claim 28. Accordingly, claims 30 and 31 are also objected to for being dependent on claim 29. In claims 29 and 32, "An arrangement according to claim 28" should be changed to --An arrangement according to claim 22--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 2, 7-10, 22, 23, 29-31, 45, 50, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters (U.S. Patent 6,243,683), in view of Kubon (U.S. Patent 5,682,030).

In regard to claim 1 and 7, Peters discloses a method of enabling voice control of an apparatus provided with a voice-control subsystem including a speech recognizer, the method involving at least the steps of:

(a) detecting when a user is looking towards the apparatus by a camera system (Fig. 2, 108), the camera system being processed by an image processing subsystem (gesture recognition unit 206) to determine if the user is looking towards the apparatus (Fig. 3, step 304, gesture recognition unit 206 determines when a user is looking at the camera 108 in apparatus 200, column 3, lines 23-27); and

(b) initially enabling voice control of the apparatus by its voice control subsystem only when the user is detected in step (a) as looking towards the apparatus (start signal is sent to speech recognition unit 204, column 3, lines 52-55).

Peters does not disclose that the detection of the user looking towards the apparatus is accomplished by using a camera system mounted on the user's head and arranged to point in the direction the user is facing or looking.

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Kubon discloses a head mounted camera arranged to point in the direction the user is facing or looking (Fig. 23, 2301; column 26, lines 61-64). The camera detects when a user is looking towards an apparatus by recognizing a bar code in the video signal (column 27, lines 17-20).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Peters to use a head mounted camera, as disclosed by Kubon, to recognize the apparatus in the video signal to activate the speech recognition device, rather than using a camera mounted on the apparatus to recognize when the user was looking at the apparatus, since using the head mounted device would only require one camera for a plurality of apparatuses, rather than a separate camera for each apparatus. Furthermore, the amount of processing needed to recognize a bar code in a video signal is much less than the amount needed to recognize whether a user's face is looking at a camera, so the head mounted camera would reduce the delay in processing the signal from the camera.

In regard to claim 2, Peters discloses the apparatus only remains enabled for voice control whilst the user continues to be detected in (a) as looking towards the apparatus (column 3, line 67 to column 4, line 3).

In regard to claims 8, 9, 29, and 30, the combination of Peters and Kubon, as discussed in reference to claim 1, above, discloses in Kubon the apparatus carries an identifying mark in the form of a perspective invariant bar code that is used to identify

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the apparatus to the image processing subsystem (camera 2301 sends the video signal to video decoder 2303 to interpret bar codes in the signal, column 27, lines 14-20).

In regard to claim 10 and 31, the combination of Peters and Kubon, as discussed in reference to claim 1, above, discloses in Kubon that the identifying mark takes the form of an encoded optical signal (a barcode used as an identifying mark that is recognized by a camera will necessarily be an encoded optical signal, since a camera detects optical signals and a barcode in that optical signal would be encoded to identify the apparatus, column 27, lines 14-20).

In regard to claim 22, Peters discloses an arrangement for enabling voice control of an apparatus provided with a voice-control subsystem including a speech recognizer, the arrangement comprising:

detection means for detecting when the user is looking towards the apparatus, the detection means comprising:

image processing means for processing images produced by the camera system to determine if the user is looking towards the apparatus (Fig. 2, gesture recognition unit 206 determines when a user is looking at the camera 108 in apparatus 200, column 3, lines 23-27); and

enablement control means for initially enabling voice control of the apparatus by its voice-control subsystem only if the detection means indicate that the user is looking

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towards the apparatus (gesture recognition unit 206 sends a start signal to speech recognition unit 204, column 3, lines 52-55).

Peters does not disclose that the detection means is a head-mounted camera system arranged to point in the direction the user is facing or looking.

Kubon discloses a head mounted camera arranged to point in the direction the user is facing or looking (Fig. 23, 2301; column 26, lines 61-64). The camera detects when a user is looking towards an apparatus by recognizing a bar code in the video signal (column 27, lines 17-20).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Peters to use a head mounted camera, as disclosed by Kubon, to recognize the apparatus in the video signal to activate the speech recognition device, rather than using a camera mounted on the apparatus to recognize when the user was looking at the apparatus, since using the head mounted device would only require one camera for a plurality of apparatuses, rather than a separate camera for each apparatus. Furthermore, the amount of processing needed to recognize a bar code in a video signal is much less than the amount needed to recognize whether a user's face is looking at a camera, so the head mounted camera would reduce the delay in processing the signal from the camera.

In regard to claim 23, Peters discloses the control means (gesture recognition unit 206) is operative to keep the apparatus enabled for voice control only whilst the

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detection means continues to detect the user looking towards the apparatus (column 3, line 67 to column 4, line 3).

In regard to claim 45, Peters discloses an installation accommodating at least one apparatus (Fig. 2, embodiment 200).

In regard to claim 50, the combination of Peters and Kubon, as applied to claim 1 above, discloses in Kubon that step a) is carried out by equipment carried by the user (the head mounted camera detects when a user is looking towards an apparatus by recognizing a bar code in the video signal, column 27, lines 17-20).

Neither Peters nor Kubon explicitly disclose that step b) includes the sending of enablement signals from this equipment to the apparatus to be initially enabled.

However, the combination of Peters and Kubon, as applied to claim 1, would necessarily require the sending of enablement signals from the head mounted camera to the apparatus to be initially enabled in order for the combination to function correctly. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to further modify the combination of Peters and Kubon to send enablement signals from the head mounted apparatus to the apparatus to initially be enabled so that the recognition of the apparatus to be initially enabled by the head mounted camera functioned to activate the apparatus.

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In regard to claim 52, the combination of Peters and Kubon, as applied to claim 1 above, discloses in Kubon that the detection means is incorporated in equipment intended to be carried by the user (the detection means is a head mounted camera, column 27, lines 17-20).

Neither Peters nor Kubon explicitly disclose a communications subsystem for sending enablement signals from the equipment to the apparatus; or

control functionality at the apparatus which is responsive to the receipt of said enablement signals at the apparatus to enable the apparatus for the voice control by the voice control subsystem.

However, the combination of Peters and Kubon, as applied to claim 1, would necessarily require a communications subsystem for sending enablement signals from the equipment to the apparatus and control functionality at the apparatus which is responsive to the receipt of said enablement signals at the apparatus to enable the apparatus for the voice control by the voice control subsystem in order for the combination to function correctly. Therefore It would have been obvious to one of ordinary skill in the art at the time of invention to further modify the combination of Peters and Kubon by adding a communications subsystem to the head mounted camera and control functionality at the apparatus which was responsive to enablement signals so that the recognition of the apparatus to be initially enabled by the head mounted camera functioned to activate the apparatus.

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9. Claims 3-4 and 24-25 rejected under 35 U.S.C. 103(a) as being unpatentable over Peters, in view of Kubon, and further in view of de Cuetos et al. (U.S. Patent 6,754,373).

In regard to claims 3 and 4, Peters discloses determining characteristics of the user's voice and only allowing that particular user's voice to be processed by the apparatus (Fig. 4, a microphone array 106 and 106' is fed to a microphone array processing unit 402 which, in combination with information from the camera 108, isolates the voice of the user in a crowded room, column 4, lines 18-27 and lines 46-49).

The combination of Peters and Kubon, as applied to claim 1, above, does not disclose:

detecting when the user is speaking, and

where the user is detected as speaking whilst the apparatus is initially enabled for voice control, continuing enablement of the apparatus for voice control following the user ceasing to look towards the apparatus but only whilst the user continues speaking and for a timeout period thereafter, recommencement of speaking by the user during this timeout period continuing enablement of voice control with timing of the timeout period being reset

De Cuetos et al. discloses a method for activating a speech recognition device using visual cues, wherein the method:

detects when a user is speaking (checks to see if speech continues, column 4, line 44); and

where the user is detected as speaking whilst the apparatus is initially enabled for voice control, continuing enablement of the apparatus for voice control following the user ceasing to look towards the apparatus but only whilst the user continues speaking and for a timeout period thereafter, recommencement of speaking by the user during this timeout period continuing enablement of voice control with timing of the timeout period being reset (the countdown timer turns the microphone off after a certain amount of time after the speech terminates, but if the speech continues, the countdown timer is reset, column 4, lines 41-49).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify the combination of Peters and Kubon to continue to recognize speech while the user looked away from the apparatus if the user had not paused for more than a certain timeout period, and to only do so when that particular user was speaking, so the user could look away from the apparatus while continuing to give it speech commands, thereby allowing the user to work on other tasks, and so only that user's commands would be utilized if more than one person was talking in the vicinity of the apparatus.

In regard to claims 24 and 25, Peters discloses a voice analyzer for determining characteristics of the user's voice and only allowing that particular user's voice to be processed by the apparatus (Fig. 4, a microphone array 106 and 106' is fed to a microphone array processing unit 402 which, in combination with information from the

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camera 108, isolates the voice of the user in a crowded room, column 4, lines 18-27 and lines 46-49).

Peters further discloses an initial means for effecting the initial enabling of the apparatus for voice control (gesture recognition unit 206 sends a start signal to speech recognition unit 204, column 3, lines 52-55).

The combination of Peters and Kubon, as applied to claim 22, above, does not disclose:

delayed-disablement means including timing means for timing a timeout period;
and

means for activating the delayed-disablement means upon the speaking detector detecting a user speaking whilst the apparatus is initially enabled by the initial enablement means;

the delayed-disablement means, when activated, being operative to keep the apparatus enabled for voice control following the detection means ceasing to detect that the user is looking towards the apparatus but only whilst the speaking detector continues to detect that the user is speaking and for the duration thereafter of the said timeout period as timed by the timing means, the delayed-disablement means being responsive to the speaking detector detecting recommencement of speaking by the user during this timeout period to reset timing of the timeout period.

De Cuetos et al. discloses delayed-disablement means (computer) including timing means for timing a timeout period (the computer checks to see if speech continues, column 4, line 44); and

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means for activating the delayed-disablement means upon the speaking detector detecting a user speaking whilst the apparatus is initially enabled by the initial enablement means (the computer checks to see if speech continues, column 4, line 44);

the delayed-disablement means, when activated, being operative to keep the apparatus enabled for voice control following the detection means ceasing to detect that the user is looking towards the apparatus but only whilst the speaking detector continues to detect that the user is speaking and for the duration thereafter of the said timeout period as timed by the timing means, the delayed-disablement means being responsive to the speaking detector detecting recommencement of speaking by the user during this timeout period to reset timing of the timeout period (the countdown timer turns the microphone off after a certain amount of time after the speech terminates, but if the speech continues, the countdown timer is reset, column 4, lines 41-49).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify the combination of Peters and Kubon to continue to recognize speech while the user looked away from the apparatus if the user had not paused for more than a certain timeout period, and to only do so when that particular user was speaking, so the user could look away from the apparatus while continuing to give it speech commands, thereby allowing the user to work on other tasks, and so only that user's commands would be utilized if more than one person was talking in the vicinity of the apparatus.

10. Claims 11 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters, in view of Kubon, and further in view of Shachar (U.S. Patent 6,012,102).

In regard to claim, neither Peters nor Kubon disclose the identifying mark encodes a communications address at which the apparatus can be located.

Shachar discloses an identifying mark (bar code) that encodes a communications address (network resource address, column 5, lines 48-50).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify the combination of Peters and Kubon to encode the communications address of the apparatus in the identifying mark (bar code) so the user carried equipment could communicate with the apparatus automatically, without the need to register the apparatus with the user carried equipment, thereby allowing a new apparatus to be easily added to the work space.

11. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Peters, in view of Kubon, and further in view of Everhart (U.S. Patent 6230,138).

Neither Peters nor Kubon explicitly disclose that the combination, as applied to claim 1, above, is applied in an environment including multiple apparatus's each with its own voice-controlled subsystem, step b) including communicating enablement signals to the apparatus determined in step a) as being looked towards by the user.

Everhart teaches that in an environment (car) with multiple voice controlled subsystems (speech recognition systems) enabling one of the voice controlled

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subsystems will increase the accuracy of that voice controlled subsystem, since the recognizer of that voice controlled subsystem can be programmed to recognize speech signals originating from locations with different acoustical properties (column 5, lines 60-65).

Furthermore, the combination of Peters and Kubon, as applied to claim 1, would necessarily require a communications subsystem for sending enablement signals from the equipment to the apparatus and control functionality at the apparatus which is responsive to the receipt of said enablement signals at the apparatus to enable the apparatus for the voice control by the voice control subsystem in order for the combination to function correctly.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to apply the combination of Peters and Kubon to enable one voice controlled apparatus in an environment including multiple apparatus's, in order to increase the accuracy of that voice controlled subsystem, as taught by Everhart.

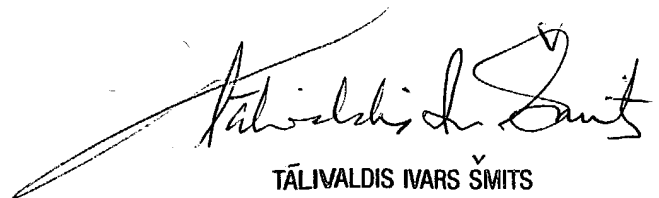
It also would have been obvious to one of ordinary skill in the art at the time of invention to further modify the combination of Peters and Kubon to send enablement signals from the head mounted apparatus to the apparatus to initially be enabled so that the recognition of the apparatus to be initially enabled by the head mounted camera functioned to activate the apparatus.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Swartz et al. (U.S. Patent 6,629,642) discloses a system that use a barcode to identify a unique communications address for an apparatus. Launey et al. (U.S. Patent 5,086,385) discloses an environment with multiple speech recognition apparatuses. Lewis et al. (U.S. Patent 6,795,806) discloses a head mounted apparatus to identify where a user is looking on a computer screen to determine whether the user intends to speak a voice command or dictation. Catallo et al. (U.S. Patent 5,867,817) discloses a head mounted speech recognition device.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian L Albertalli whose telephone number is (703) 305-1817. The examiner can normally be reached on Mon - Fri, 8:00 AM - 5:30 PM, every second Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Smits can be reached on (703) 305-3011. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



TĀLIVALDIS IVARS ŠMITS
PRIMARY EXAMINER

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BLA 11/3/04